

Amendments to the Claims

1. (Currently amended) Apparatus for sterilizing and detoxifying the inside of an enclosure comprising
(A) means for sealing said enclosure;
(B) means for generating a concentration of hydroxyl free radicals inside said sealed enclosure of at least about $[[10^{12}]]$ 10^{16} molecules/cc for at least 1 minute without any person entering the said enclosure;
(B)(C) a pump for pumping gas out of said enclosure; and
(C)(D) means for detoxifying gas pumped out of said enclosure.
2. (Currently amended) Apparatus according to Claim 1 wherein said means for generating hydroxyl free radicals is an ozonizer, a hydrogen atom donor, an ultraviolet lamp, and means for mixing said ozone and said hydrogen atom donor and exposing said mixture to light from said ultraviolet lamp.
3. (Original) Apparatus according to Claim 2 wherein said ozonizer is outside said enclosure and said hydroxyl free radicals are generated inside said enclosure.
4. (Original) Apparatus according to Claim 2 wherein said hydrogen atom donor is water vapor.

5. (Original) Apparatus according to Claim 1 wherein said means for generating hydroxyl free radicals is hydrogen gas, nitrogen dioxide gas, an ultraviolet lamp, and a means for mixing and releasing them inside said enclosure.
6. (Currently amended) Apparatus according to Claim 1 including means for maintaining the inside of said enclosure at a temperature of about 0 to about 70°C 15°C.
7. (Original) Apparatus according to Claim 1 including means for maintaining the relative humidity inside said enclosure at about 10 to about 40%.
8. (Currently amended) Apparatus according to Claim 1 ~~including a pump for pumping gas out of said enclosure whereby the inside said enclosure is at less than atmospheric pressure~~ wherein said means for detoxifying said gas is a cold trap.
9. (Original) Apparatus according to Claim 1 wherein said enclosure contains Bacillus anthracis.
10. (Currently amended) A method of detoxifying the inside of an enclosure using an apparatus according to Claim 1 comprising

(A) sealing said enclosure;

(B) generating said hydroxyl free radicals and releasing them inside said enclosure at a concentration of at least about 10^{16} molecules/cc for at least 1 minute without any person entering said enclosure;

(C) pumping gas out of said enclosure; and

(D) detoxifying said gas.

11. (Original) A method according to Claim 10 wherein said hydroxyl free radicals are generated by reacting ozone with water in the presence of ultraviolet light.

12. (Original) A method according to Claim 10 wherein said hydroxyl free radicals are generated by reacting hydrogen with nitrogen dioxide in the presence of ultraviolet light.

1 13. (Currently amended) Apparatus for detoxifying the inside of a ~~room~~ an
2 enclosure containing pathogens comprising

3 (A) means for sealing said enclosure;

4 (B) an ultraviolet lamp for generating ultraviolet light at a
5 wavelength of less than about 300 nm;

6 (B)(C) an ozonizer outside of said ~~room~~ enclosure, for
7 generating ozone from air;

8 (C)(D) a source of a gaseous hydrogen atom donor ~~water~~

9 vapor; and
10 ~~(D)~~(E) means for mixing said ozone with said gaseous
11 ~~hydrogen atom donor~~ water vapor in a molar ratio of about 1:1
12 to about 10:1 and exposing said mixture to said ultraviolet
13 radiation inside said enclosure, said apparatus ~~being capable~~
14 of generating a concentration of hydroxyl free radicals inside
15 said enclosure of at least about 10^{16} molecules/cc for at least
16 about 1 hour without any person entering said enclosure;
17 (F) a pump for pumping gas out of said enclosure; and
18 (G) means for detoxifying gas pumped out of said
19 enclosure.

14. (Currently amended) Apparatus according to Claim 13 ~~1~~ wherein said
 ~~hydrogen atom donor is water vapor~~ including means for producing a
 partial vacuum within said sealed enclosure of about 200 to about 750
 Torr.

15. (Original) Apparatus according to Claim 13 wherein said UV light can
 generate at least about $1 \mu\text{-Joule/cm}^2$ of ultraviolet light per mole of said
 ozone at a wavelength of about 100 to about 300 nm.

1 16. (Currently amended) A method of detoxifying the inside an enclosure
2 using an apparatus according to Claim 13 comprising

3 (A) sealing said enclosure;
4 (~~A~~)(B) generating ozone with said ozonizer;
5 (~~B~~)(C) turning on said ultraviolet lamp;
6 (~~G~~)(D) mixing said ozone and said water vapor at a molar
7 ratio of about 1:1 to about 10:1; and
8 (~~D~~)(E) exposing said mixture to said ultraviolet light inside
9 said enclosure, whereby hydroxyl free radicals are formed at a
10 concentration of at least about 10^{16} molecules/cc for at least
11 about 1 hour without any person entering said enclosure;
12 (F) pumping gas out of said enclosure; and
13 (G) detoxifying said gas.

17. (Currently amended) A method according to Claim 16 ~~wherein said~~
~~hydrogen atom donor is water vapor~~ including the step of producing a
partial vacuum within said sealed enclosure of about 200 to about 750
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18. (Currently amended) A method according to Claim 16 wherein the relative
humidity inside said enclosure is about 10 to about 40% and the
temperature inside said enclosure is about 0 to about 70°C 15°C.

1 19. (Currently amended) Apparatus for sterilizing the inside of ~~a room~~ an
2 enclosure containing pathogens comprising

3 (A) ~~an ozonizer outside of said room, for generating ozone~~
4 means for sealing said enclosure;
5 (B) an ultraviolet lamp for generating about $1\text{ }\mu\text{Joule/cm}^2$ to
6 ~~about 1 Joule/cm^2 of ultraviolet light per mole of said ozone at~~
7 ~~a wavelength of less than about 100 to about 300 nm;~~
8 (C) a source of ~~water vapor~~ hydrogen gas and a source of
9 nitrogen dioxide gas; and
10 (D) means for mixing said ~~ozone~~ hydrogen gas with said
11 ~~water vapor~~ nitrogen dioxide gas in a molar ratio of ~~ozone to~~
12 ~~water of about 1:1~~ 0.9:1 to about ~~10:1~~ 1.1:1 outside said
13 enclosure and exposing said mixture to said ultraviolet light
14 inside said ~~room~~ enclosure, said apparatus ~~being capable of~~
15 generating a concentration of hydroxyl free radicals inside
16 said room is of at least about 10^{16} molecules/cc for at least
17 about 1 hour without any person entering said enclosure;
18 (E) a pump for pumping gas out of said enclosure; and
19 (F) means for detoxifying said gas.

1 20. (Currently amended) A method of sterilizing the inside ~~a room~~ an
2 enclosure using an apparatus according to Claim 19 comprising

3 (A) ~~generating ozone with said ozonizer~~ sealing said
4 enclosure;
5 (B) ~~turning on said ultraviolet lamp;~~

6 ~~(C)~~ mixing said ~~ozone~~ hydrogen gas and said ~~water vapor~~
7 nitrogen dioxide gas at a molar ratio of about 4:1 0.9:1 to
8 about ~~40:4~~ 1.1:1; and
9 ~~(D)~~(C) exposing said mixture to said ultraviolet light, whereby
10 ~~hydroxyl~~ free radicals are formed inside said ~~room~~ enclosure
11 at a concentration of at least about 10^{16} molecules/cc for at
12 least about 1 hour without any person entering said enclosure;
13 (D) pumping gas out of said enclosure; and
14 (E) detoxifying said gas.